

**ROUTINE ANTIBIOTIC
COVER FOR NEWBORNS
INTUBATED FOR
ASPIRATING MECONIUM:
IS IT NECESSARY?**

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ABSTRACT

A retrospective analysis was performed on 215 babies to evaluate the incidence of septicemia in babies intubated at birth for aspirating meconium from the trachea. Only term, appropriate for gestational age babies were included. Babies with any known perinatal risk factor for infection were excluded from the study and none of the babies had been put on "prophylactic antibiotics". There were 88 babies in the intubated group in a one year period from January 1991 to December 1991. One hundred and twenty seven babies were taken as controls. There was no significant difference in the incidence of early septicemia in the two groups. There were no deaths in either group. It is concluded that well term babies who are intubated for aspirating meconium need not be put on routine antibiotic cover.

Key words: *Antibiotic cover, Meconium, Intubation, Newborns.*

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Well neonates are intubated in the delivery room during resuscitation for various reasons like presence of meconium in the amniotic fluid and respiratory depression after maternal sedation with pethidine, general anesthesia, *etc.* Barring babies who have severe perinatal asphyxia or meconium aspiration syndrome most of the others require very little after care and can be left by the mother's side after resuscitation is over. It may be a dilemma in some nurseries whether to commence these babies, who have been intubated for aspirating meconium, on antibiotic prophylaxis for 72 hours till blood cultures are proven sterile. Assuming that about 10-15%(1-3) of all deliveries may have meconium stained liquor, a large number of newborns may be subjected to this treatment. While routine antibiotic use in severely asphyxiated babies who require intubation for resuscitation may be accepted by some, its use in well babies is controversial. To our knowledge there are only two studies(3,4) documenting that this practice is unnecessary.

Material and Methods

Case sheets of the Neonatal Unit of the Kasturba Hospital, Manipal were analyzed to determine whether the incidence of systemic bacterial infection was higher in the group intubated at delivery for aspirating meconium as compared to those who had not been thus intubated.

Two hundred and fifteen records of infants born during the period January 1991 to December 1991 were reviewed. Criteria for inclusion were: (i) term ap-

appropriate for gestation inborn babies; (ii) rupture membrane delivery interval <12 hours; (iii) APGAR >8 at one minute, and (iv) mothers with no intrapartum risk factors for infection like fever, foul smelling liquor, unclean vaginal examination or persistent fetal tachycardia (>160/min). Eighty eight babies intubated for aspirating meconium from trachea were taken as cases. Babies with thin watery meconium are not routinely intubated for aspiration and were excluded from the study. One hundred and twenty seven babies matched for weight and gestation who were not intubated were taken as controls.

Endotracheal tubes used for resuscitation were all old and had been immersed in Cidex for at least 10 minutes before each use. Stylets were all made of copper and had been similarly disinfected. Laryngoscope blades had been wiped clean with alcohol before and after each use. Routine handwash had been carried out in all cases before intubation and reasonable asepsis was maintained during the procedure.

Information was collected about each baby's clinical course upto the time of discharge (mean duration of stay 5 days). Babies who developed symptoms and signs of septicemia within 72 hours of birth were considered for the study. A partial sepsis work up (complete blood count, micro ESR and blood culture) was done only in cases of suspected septicemia and these babies were commenced on intravenous gentamicin and cloxacillin as per the routine policy in the unit. No baby received "prophylactic antibiotics" either in the study or control group. Antibiotics were discontinued

after 72 hours of treatment if the baby was well and blood cultures were sterile. If blood cultures were positive or if baby was unwell, antibiotics were continued for 10 days.

Results

A total of 215 cases were studied. Eighty eight babies had been intubated which constituted the cases and 127 babies were taken as controls. Population characteristics of the study and control group are given in *Table I*. The number of babies who developed symptoms and signs of sepsis and bacteremia in the two groups is stated in *Table II*. None of

TABLE I—Population Characteristics

Characteristics	Intubated	Non intubated
Total cases	88	127
Mean birth weight (g)	3027 ± 402.25	2945.62 ± 429.10
Mean gestational age (wk)	39.33 ± 1.23	39.13 ± 1.16

TABLE II—Symptoms and Signs of Sepsis and Organisms Isolated in Intubated and Non intubated Babies

Characteristics	Intubated (n=88)	Non intubated (n=127)
Symptoms & signs	10	9
Organisms isolated	1	2
Deaths	0	0

p = 0.635 (not significant)

the results were statistically significant. There was no meningitis or death in either group. The organism cultured in the one case of sepsis in the intubated group was coagulase positive *Staphylococcus aureus* and that in the non-intubated group was *Acinetobacter* in one case and *Pseudomonas* in the other. No other complication of intubation was noted in the study group.

Discussion

Intubation of well term babies especially those with meconium stained liquor is on the increase with greater awareness of complications of meconium aspiration syndrome(5,6). There are reports questioning need for intubation for aspirating meconium in vigorous neonates(7) but practices differ in various centres. With a large number of unbooked cases managed in busy hospitals, meconium stained liquor constitutes almost 10-15% of all deliveries(1-3). This study showed no difference in the incidence of clinical sepsis or bacteremia in the intubated and non-intubated group. Wiswell *et al.* and Tollner(3,4) have shown that presence of meconium *per se* is not an indication for antibiotics. This has been borne out in the present study as well. More studies are needed before this can be confidently said about term asphyxiated and other categories of low birth weight babies.

On the basis of this retrospective analysis it, therefore, appears that routine antibiotic cover may not be necessary in well term babies who have been

intubated for aspiration of meconium. These babies can be closely monitored for any symptom of septicemia and treated accordingly. However, prospective controlled studies are required before definite conclusions can be drawn in cases of asphyxiated newborns and preterm babies.

REFERENCES

1. Kleigman RM, Behrman RE. Disturbances of the respiratory tract. *In: Nelson's Textbook of Pediatrics*, 14th edn. Eds Behrman RE, Vaughan VC, Nelson WE. Philadelphia, W.B. Saunders Co, 1991, pp 400-401.
2. Wiswell TE, Tuggle JM, Turner BS. Meconium aspiration syndrome: Have we made a difference? *Pediatrics* 1990, 85:715-721.
3. Wiswell TE, Henley MA. Intra-tracheal suctioning, systemic infection and the meconium aspiration syndrome. *Pediatrics* 1992, 89: 2063-2064.
4. Tollner U, Traub E, Pophlandt F. Aspiration of meconium stained amniotic fluid. *Z-Geburtshilfe Perinatal* 1978, 182: 98-104.
5. Ting P, Brady JP. Tracheal suction in meconium aspiration. *Am J Obstet Gynecol* 1975, 122:767-771.
6. Carson BS, Losey RW, Bowes WA, Simmons MA. Combined obstetric and pediatric approach to prevent meconium aspiration syndrome. *Am J Obstet Gynecol* 1976, 126: 712-715.
7. Linder N, Aranda JV, Tsur M, *et al.* Need for endotracheal intubation and suction in meconium-stained neonates. *J Pediatr* 1988, 112: 613-615.